White Paper

A Vision of Responsible Research in Business and Management: Striving for credible and useful knowledge

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Community for Responsible Research in Business and Management[1] [2]

EXECUTIVE SUMMARY

This paper presents a vision of a future "Vision 2030" in which business schools and scholars worldwide have successfully transformed their research toward *responsible science* [3] – defined as research that produces credible and reliable knowledge with either direct or indirect usefulness for addressing problems important to both business and society. [4] This vision is based on the belief that business is a means for a better world. The paper begins with a set of principles to support responsible research. Then, the paper outlines possible actions by different stakeholders to help business schools and scholars that wish to realize this vision. The paper further explains the impetus for the proposal by describing the current business research ecosystem and associated problems, drawing on published work and a Delphi survey of scholars who have written about different aspects of the current research challenges. The major challenge of the current research ecosystem is that the priority of publishing in top tier journals over-shadows considerations of both research quality and societal relevance. The paper ends with a discussion of the "do nothing" option that perpetuates the status quo, and a call to action for directing research toward achieving humanity's highest aspirations. The paper invites discussion and debate on the possibility and necessity of creating a "responsible research" ecosystem so that business and management research can become a force of change for a better world.

This *White Paper* starts us on a journey toward a substantive rethinking of business and management research and, more broadly, about its evolving roles and expectations in

[1] The Community for Responsible Research in Business and Management (cRRBM) is a group of scholars dedicated to the advancement of responsible science – as defined in the white paper – in business and management schools worldwide. Authors of this white paper are founding members of cRRBM. Their names with affiliations appear at the end of this paper. Correspondence email is: atsui@nd.edu. The website crrbm.org is under construction.

[2] Although the authors are largely based in North America and Europe, we believe the concerns addressed in this white paper have broad application, as the research community in business and management, and its standards for evaluating research, become increasingly global. However, most of the authors have been connected and contributed to a system that is ultimately flawed. So, the paper acts as a warning to other parts of the world- please don't do to yourselves what we did to ourselves."

[3] Responsible or socially responsible science (used interchangeably) is a well-known concept in the philosophy of science circle (Brown, 2013; Kourany, 2010, 2013). The basic argument is that beyond producing reliable knowledge, science should be more socially engaged and socially responsible than is advocated by the value-free ideal (Tsui, 2016). Responsible research and responsible science are synomous ideas in this paper.

[4] The word 'reliable' refers to results that can be reproduced in other studies or by other researchers. The word 'credible' refers to knowledge based on carefully executed research either quantitatively or qualitatively, or both.

society. Our audience goes beyond the higher education community, and we invite broad participation in this discussion. While scholars, editors, university presidents, deans, professional associations, accrediting, funding agencies and the public (through the media) have faulted elements of the current business research ecosystem, Vision 2030 portrays a promising future and advocates principles that underpin its ultimate success.

VISION 2030

In 2030, business and management schools worldwide are the envy of other social science disciplines in the universities. Research is timely and cutting edge, producing well-grounded knowledge on pressing problems. Both schools and scholars are committed to the principles of responsible research, which are embedded in the core curriculum of doctoral education. Research has helped organizations and communities of all kinds to develop effective systems leading to high economic performance, great innovations, positive employee and customer wellbeing, a clean environment, and strong communities. Policymakers routinely seek the guidance of business academics in developing policies that promote vibrant socio-economic systems for their constituents. Many schools have a focused area of research where they excel and are centers of excellence around their chosen areas of focus. Many schools have contributed valuable knowledge to support humanity's highest aspirations, e.g., poverty alleviation; access to food, clean water, and education; a green environment, gender and social equality; economic growth and fair wealth distribution. Business leaders and government officials are frequent guests in business and management schools, seeking advice on policies and offering support for research on issues that need understanding. Business and management research is a model of "responsible research" after a major transformation that began in 2017.

A. BACKGROUND

Business and management researchers have a unique capacity to guide the actions of organizational leaders to create a prosperous and sustainable future. Research is a core activity of most university-based business and management schools.[5] Yet both the quality and relevance of research in business schools has been under attack for more than two decades.[6] These attacks can be summarized in terms of two core issues. The first concerns the *quality* of research, with the potential to threaten the integrity of science. The system of incentives that encourages publications in a small set of elite journals and values novelty for its own sake has fueled unreliable research findings and little cumulation. The second

[5] We recognize the nuanced difference between business and management schools with the latter less wedded to a capitalist model and more focused on public and third sector bodies and other market mechanisms. In this paper, we use the two terms interchangeably because a) we see the research issues as consistent between these schools and b) because there is good degree of correlation between them, especially in terms of vision and product portfolios.

[6] For example, Don Hambrick's (1994) presidential address at the 1993 Academy of Management annual meeting is often cited as the beginning of this conversation in the management field.

core issue is the widening *gap between research and practice*, with business research increasingly divorced from the real world. Because research is evaluated primarily on the basis of its impact on subsequent research rather than on its ability to address real world problems, its link to practice is muted.[7] The two core problems are inter-connected, as the societal relevance of research depends on reliable knowledge. Relevance is moot when quality is in doubt. Responsible research is about both reliable and useful knowledge.

Research in business schools is costly, and business schools face competition from low-cost alternative education providers that are not burdened by the expense of research.[8] Resource providers, including students, donors, legislators, and funding agencies, deserve to understand how business research provides a benefit to society. We believe it is time to reorient the research ecosystem with the aim to produce more actionable and reliable knowledge for better business and management practices and ultimately a better world with a sustainable future. It is time to reclaim the high ground for business and management research.

This *White Paper* starts us on a journey toward a substantive rethinking of business and management research and, more broadly, about its evolving roles and expectations in society. Our audience goes beyond the higher education community, and we invite broad participation in this discussion. While scholars, editors, university presidents, deans, professional associations, accrediting associations, funding agencies, and the public (e.g., media) have faulted elements of the current business research ecosystem, Vision 2030 portrays a promising future and advocates principles that underpin its ultimate success.

B. PRINCIPLES OF RESPONSIBLE RESEARCH

In 2030, the business and management research community is building a sound body of knowledge that serves society. To develop a shared purpose, many business and management schools have adopted the seven guiding principles of responsible research.

Principle 1 – Service to Society: *Business research aims to develop knowledge that benefits business and the broader society, locally and globally, for the ultimate purpose of creating a better world.*

> Implication: Research should aim both to systematize knowledge of best practices, current and past, and to guide practice by creating knowledge based on current and future scenarios. Business education must not focus only on knowledge of the past, because business students need knowledge, skills, and values relevant to both

[7] Many articles have been written reflecting on and criticizing the problems of both the quality and relevance of research in the business disciplines. A partial list of such articles (Appendix A) is available on www.crrbm.org.

[8] One study (Terwiesch&Ulrich, 2014), on the cost of MBA education, estimated that an A-journal article costs about $400,000 of investment in faculty time and research support. https://mackinstitute.wharton.upenn.edu/wp-content/uploads/2014/07/Terwiesch_Ulrich_Threat-and-Opportunity-of-MOOCs-for-MBA-Programs.pdf

managing in the current context and dealing with emerging changes.

Principle 2 – Stakeholder Involvement: *Business and management schools value the involvement of stakeholders who play critical roles at various stages of the scientific process, from selecting problems to study to creating impact on practice.*

Implication: The research ecosystem consists of many participants including the researchers who serve as the producers of knowledge and the evaluators of research outputs. Other stakeholders include journal editors, tenure and promotion committee members, school leadership, directors of PhD programs, accreditation agencies, funding organizations, ranking publishers, and business leaders and students as beneficiaries of knowledge. Business and management schools can benefit from "co-creation" of knowledge with businesses and other organizations such as NGOs, governments, and social enterprises.

Principle 3 – Impact on Stakeholders: *Business and management schools measure and reward research that has a positive impact on diverse stakeholders, especially recognizing the importance for business and society*.

Implication: Business and management schools recognize that the publication itself is not the outcome or the end goal, but a step in the journey to scholarly and/or societal impact. Assessing impact may require multiple papers, dissemination of findings to non-academic circles, and tracking whether companies, communities or policy makers benefit from this program of research. Impact also includes teaching of the findings from evidence-based responsible science in undergraduate, masters, doctoral, and executive education programs. Promotion and tenure requirements reflect this requirement to institutionalize impact on society.

Principle 4 – Valuing Both Basic and Applied Contributions: *Business school deans, journal editors, and other stakeholders respect and recognize contributions in both theoretical and applied research.*

Implication: Theories are important to guide our collective understanding of phenomena and patterns, addressing issues such as compensation and governance (economics, finance, management) or customer service and fulfillment (marketing, operations, information systems). Integrating theory- and practice-led problems in business school research will enhance its utility for stakeholders who support this research.

Principle 5 – Value of Plurality and Multidisciplinary Collaboration: *Business school deans, senior leadership, journal editors, funding agencies and accreditation agencies value diversity in research themes, methods, forms of scholarship, types of inquiry, and especially interdisciplinary collaborative research to reflect the plurality and complexity of societal problems.*

Implication: Business and management research supports pluralism in its theories,

grounded in different assumptions about human nature, a multiplicity of social realities, and alternative models of business and its role in society. Idea-rich, in-depth ethnographic studies of corporate practices yielding reflective and imaginative thinking that may contribute to new theorizing is as valuable as quantitative studies. In the global context, business and management research values both "global" and "local" knowledge development. Due to the complexity of problems in business and society, stakeholders value and reward interdisciplinary research not only within business disciplines but across business and other social science disciplines as well as engineering, medicine, education, or humanities.

Principle 6 - Reliable Knowledge: *Business research implements sound scientific methods and processes.*

Implication: The robustness of empirical work in business research should take into account emerging practices in good science. For example, research practices that value replication, falsification, and reproducibility should be encouraged. Journals and professional associations adopt practices such as open data and software code repositories, conflict of interest disclosures, disclosure of data use, and transparency of sample construction and measures, among others. Similar expectations apply to in-depth, ethnographic field studies. The expectation of data transparency might reduce the volume of studies generated, but could improve the quality and comprehensiveness of studies by discouraging data slicing and other questionable practices. Mathematical models are calibrated using real data and assumptions are ultimately validated using empirical evidence.

Principle 7 – Broad Dissemination: *Business and management schools value diverse forms of knowledge dissemination that collectively advance basic knowledge and practice.*

Implication: The digitization of the global economy has suggested new forms of dissemination of research findings, including social media. Business schools have opportunities to improve the visibility of ongoing research through open models of publishing, as well as drawing insights in simple and powerful ways to influence the target audience or stakeholder communities. At the same time, we re-affirm the centrality of rigorous peer review for building reliable knowledge.

C. POSSIBLE ACTIONS TOWARD VISION 2030

Acting on these principles requires changing incentive systems at all levels: individual faculty, journals, and schools. Proclaiming principles is not sufficient: we need to change the ecosystem of research so that individual researchers are rewarded for making progress toward the achievement of our higher goals. Thus, to realize Vision 2030 and to pursue responsible research will require concurrent and coordinated actions across all relevant stakeholder groups with the common goal of valuing rigorous scholarship resulting in actionable knowledge. We suggest a few possible actions by the key stakeholders of the research function of business schools.

1. Journal Editors and Publishers

a. Encourage and publish research that addresses problems important to business and society, problems that are complex and span disciplinary boundaries.
b. Emphasize research context, important phenomena, and their implications for impact on broader stakeholder communities, while developing generalizable theories and insights.
c. Publish replications, negative findings, and nonsignificant findings for robust knowledge that challenges positive or theory-supporting findings.
d. Form a mutually supportive community of editors to pledge a commitment to the practice of responsible science in their journals.

2. Scholarly Association Leaders

a. Reinforce professional commitment, among both current and new members, to a higher aim of service to society and humanity.
b. Identify and share with members the grand challenges in business and society and in professional practices as opportunities for research with impact.
c. Strengthen and actively promote applied and impactful research in their mission statements.
d. Encourage and promote inter-disciplinary research.

3. University Leaders, Deans, Associate Deans, Department Heads, Senior Scholars

a. Develop a vision and a strategy to encourage faculty to work on research that would make a positive difference in practice and in society.
b. Design promotion and tenure criteria that value research offering reliable incremental knowledge as well as risky groundbreaking research with potential or immediate scholarly and societal impact.
c. Expand the metrics for assessing research contributions at the department and school levels to include both scholarly and professional-practical impact.
d. Revamp the PhD program by providing training on responsible research to new generations of business and management social scientists.

4. Business School Associations and Accrediting Agencies

a. Include political, cultural, business, societal and pedagogic impact of research in assessment standards.
b. Convene deans and academic leaders to discuss responsible research and the proposed principles.
c. Collect and disseminate business education intelligence on school based responsible research to assist benchmarking by schools.
d. Document and share the best practices in responsible research.
e. Work with leading deans, scholars, employers, and prospective students to persuade the business school ranking publishers to include both scholarly and applied journals in evaluating research quality and impact.

5. Funding Agencies and Government

a. Broaden the criteria for funding decisions to include anticipated societal impact in addition to intellectual merit.[9]
b. Government or public funding organizations expand the criteria for assessing research accomplishment by including the criterion of societal impact.[10]
c. Funding agencies, public (e.g., NSF, EU) or private (e.g., Ford, Templeton), can issue calls for research or provide grants on topics that relate to the grand challenges in business and society.

6. Scholars

a. Commit to pursue scholarship that contributes to reliable knowledge, protects the integrity of science, and gives priority to problems that are relevant for business and important to society.
b. Engage in responsible review of other scientists' manuscripts using relevant epistemic criteria to evaluate the quality of the work and relevant social criteria to assess the potential social impact of the findings.
c. When evaluating and rewarding the scientific accomplishments of individual scholars, engage in actual evaluation of the importance of the ideas and quality of the knowledge produced, do not rely only on proxies (i.e., read the materials and do not just count the number of articles in a defined set of journals).
d. Follow the principles of responsible science in all scholarly activities in their roles as authors, reviewers, editors, educators, and evaluation committee members.

7. Other External Stakeholders (businesses, social organizations, alumni, students, society)

a. As recipients of knowledge from research, members of society in both commercial and non-commercial sectors can share their challenges as potential subjects or topics of business and management research.
b. Articulate and sensitize researchers to the challenges faced by organizations, and assist in framing important research problems that are directly relevant to business and society.
c. Share data and allow access to data collection sites, which facilitate collection of reliable empirical evidence to solve societal and organizational problems.
d. Provide examples of best practices in business and management and open their organizations to support responsible science for the betterment of societies.

8. Coordinated Commitment Mechanisms

[9] The U.S. National Science Foundation has added "broader impacts criterion" in its review of proposals. https://www.nsf.gov/od/oia/special/broaderimpacts/

[10] The UK Research Excellence Framework (2014) placed 20% weight on societal impact in assessing universities research programs. http://www.ref.ac.uk/pubs/2011-01/. The UK Stern Report (2016) (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/541338/ind-16-9-ref-stern-review.pdf) calls for a broadening of ther definition of impact to embrace public engagement, culture and pedagogy as well as the traditional emphasis on policy and applications. It advises that impact and research environment be combined in the next REF assessment to form 35% of the weighting.

The success of the actions of each stakeholder will require the support of similarly oriented actions by all stakeholders. Coordinated actions with a focus on responsible science in business and management will have a greater promise of success. Below we suggest a few examples of such coordinated commitment mechanisms.

a. Commitment to "responsible research" by all scholar-scientists

The core responsibility for the production of relevant or actionable knowledge rests with the community of scholar-scientists working in business and management schools as well as allied social science disciplines such as economics, sociology, psychology, education, communications, anthropology, or political science. Their personal commitment to engage in responsible science is central to the transformation of research from the current focus on publications and careers to a focus on knowledge aiming for social impact. We seek commitment from research scholars to uphold responsible science, by joining the "Community for Responsible Research in Business and Management (CRRBM)". The website for CRRBM will host this white paper, a page to pledge support to the seven principles of responsible research and an interactive section to share ideas and exchange resources. The vision is to advance the long-term goal of transforming business and management research toward both rigor in scholarship and relevance to practice.

b. Commitment to "responsible research" by leading business schools around the world

We see the power of a group of leading business schools around the world committed to the principles of responsible science. When top schools serve as role models, other schools will follow. The top schools have both the duty and the status to lead the effort to increase the societal relevance of their research. These leading business schools can partner with accreditation agencies to share best practices in faculty development and evaluation as well as doctoral education that will advance responsible science. We see the potential of a consortium of leading business schools that pledge to share best practices using the platform of deans' conferences organized by the accreditation agencies around the world.

c. Commitment to "responsible research" by professional associations of all disciplines

The value of the leadership of professional associations of the disciplines of the business and management schools, including accounting, finance, information systems, human resource management, marketing, strategy, supply chain and operations management, to support the principles of "responsible research" cannot be overestimated. Such societies can publish joint guidelines for responsible science such as metrics for measuring research quality that do not rely on journals' impact factor alone and metrics for measuring societal impact without intruding into the academic freedom of scholars. They can promote the value of service to society, including discovering knowledge useful for practice. They can encourage their journals to publish research on important societal problems like the "grand challenges" that have guided engineering and health sciences research over the past decade. They can jointly encourage business schools to reduce the silo of disciplinary journal preference and reward research that crosses disciplinary boundaries.

D. THE CURRENT BUSINESS SCHOOL RESEARCH ECOSYSTEM

Why is the above proposal necessary? What led to the desire to introduce responsible research in business schools? The impetus for our proposal came from witnessing a broad crisis of credibility in science today. This crisis has two parts. The first is the question of relevance, which is the main focus of this paper. The second is the question of integrity. The credibility of the knowledge published in journals is in doubt. Without the assurance of credible research findings, the question of relevance is irrelevant. Below, we first briefly discuss the integrity problem followed by the relevance problem.

1. Research credibility in crisis, a general problem in science

From funding agencies and legislators to citizens on the street, the integrity of the scientific enterprise is under siege. A widely reported study published in *Science* (LaCour & Green, 2014) claimed that public opinion on controversial issues could be changed through face-to-face canvassing. Within weeks the article had to be retracted when other investigators discovered that the data had been fabricated by one of the authors. Other problems arise from the scientific publication process itself. An article titled "Why most published research findings are false" (Ioannidis, 2005) describes how standard practices in research create a bias toward exaggerated findings that are often, essentially, flukes. Because journals favor positive findings over replications or null results, flukes are regularly published and fail to be dislodged. Thus, a more recent study (Open Science Collaboration, 2015) aiming to reproduce the findings of 100 articles published in elite psychology journals reported that most of these findings failed to replicate. Inevitably, other researchers claimed that the replications themselves were flawed. In light of these controversies, the public has reason to question how much credibility to give to the published record. These problems are especially pernicious in fields where science guides practice, such as medicine. According to the editor of the *British Medical Journal* (Crowe, 2016), "Drugs with harms are used and patients are unaware of those harms. Devices that shouldn't be on the market are on the market. So yes, we do know that patients are harmed, and we know that the health systems are harmed *as a result of poor science*."

The science in business schools has been criticized for these general trends also. Scholars have documented the prevalence of questionable research practices and found many conclusions in the published work are not to be trusted. Ironically, this may be a blessing in disguise. Like medicine, prescribing practices based on bad research can do more harm than good. Thankfully, efforts are underway in the natural and social sciences, as well as in the business disciplines, to promote replicable science and to restore integrity to the process of scientific publication.[11]

2. Business school research in the university

[11] A list of such efforts "Initatives to change the status quo" (Appendix B) is available on www.crrbm.org. For example, *Strategic Management Journal* (Bettis, et al., 2016) will publish replication studies, *Management and Organization Review* (Lewin, et al., 2016) will offer preapproval for studies, drawing on the model of *registered reports* in the natural and social sciences.

Professional schools in universities have a mission of providing education guided by research. Schools of law, medicine, social work, engineering, education, and other professional schools both draw on and contribute to research in the natural and social sciences. Academics in schools of education, for instance, rely on research in cognitive and developmental psychology to develop and evaluate educational practices. As part of the broader university, professional schools serve as a bridge between science and practice.

Graduates of schools of education and social work are trained for specific professions. Law and medical schools equip their graduates with the skills to pass rigorous certification exams before going into practice. Business schools are distinctive because their constituencies are broad and diffuse. Countless people go into business with no specialized training. "Business" can mean anything from a small retail shop to a multinational corporation. The range of ideas that can be researched and taught in business schools is correspondingly vast. Business school graduates can go on to work in established businesses, start their own enterprise, or work in finance, consulting, or other domains, including public service and the non-profit sector. As a result, the question of the "relevance" of business school research is a conundrum.

In the early days, fellow academics viewed business school research as too applied in its orientation, and they saw business schools as essentially vocational training centers. This led to the famous Gordon and Howell report in 1959, funded by the Ford and Carnegie Foundations, about the need to improve the scientific rigor of business school research. Business schools began to hire economists, psychologists, and sociologists to improve the scientific rigor of their studies. Subsequently, concerns for rigor often overtook questions of relevance. Business scholars are encouraged to aim their work at the most scientifically rigorous journals, especially those receiving the greatest number of citations, which come primarily from peer academic journals. Further, most business and management researchers are not dependent on research grants tied to societal impact. This creates an exaggerated emphasis on citation-based metrics as the gold standard for research quality.[12] Books, chapters and reports, which were not as amenable to these metrics, are often devalued relative to articles in A ranked scientific journals. Emphasis on citation based metrics and A journals reinforces the sole focus on the academic audience and feeds the tendency of scientistic writing style and selection of topics. Such journal articles are often inaccessible to practitioners, and people in business often find business school research to be too obscure to be put into practice. Yet business school research has the potential to serve as a credible, neutral source that can inform solutions to the pressing business or social issues of our time and to suggest practices that generate prosperity. It can occupy "Pasteur's quadrant": basic research inspired by use.

[12] It has been pointed out in the scientific communities that the quality of the journal does not imply the quality of the papers published in it (see *San Francisco Declaration of Research Assessment*. 2012, http://www.ascb.org/dora/), thus, journal quality (e.g., citation rate of the journal) should not be used as a surrogate for the quality of individual articles or individual scientists' contributions. It is further recognized that citations can be manipulated and may not be the right measure of journal quality (Davis, 2014).

3. Diagnosing the problem – insights from a Delphi study

If business school research has such great potential, then why is its promise not fulfilled? For a more systematic diagnosis, we carefully read the published work discussing business school's research problem, and conducted a Delphi survey of scholars, deans, representatives of accreditation bodies, and a sample of international authors who have written about this problem. Thirty-two participants responded to four open-ended questions and twenty-seven of these 32 completed a second round of a structured survey consisting of statements synthesized from the responses to the open-ended questions in the first round.[13] The results identified gaps between where we are and where we should be across several domains.

a. What are the major issues in our current research?

The current most pressing problems identified in the Delphi study after two rounds of survey are three: (1) Current research does not produce knowledge relevant for business practices. (2) A strong orientation toward A-ranked journals distorts incentives towards a narrow focus and excludes many important papers that are published in lesser-ranked journals. (3) An overemphasis on theory (which ironically discourages the development of new theories) leads to a focus on form more than substance; bias against negative findings; and less value placed on inter-disciplinary, problem-solving research and non-mainstream topics. Contents of textbooks lag behind the current challenges of all stakeholders.

This diagnosis confirms our current knowledge, but it certainly does not fit all disciplines and all scholars in the business school. For example, some finance research has revolutionized financial practice (albeit not always with a positive impact on society), contributions in operations management have helped vastly improve business efficiency and effectiveness, and there are faculty members in all disciplines working on problems with immediate policy aspirations. But too many researchers in business schools write the next "me too" papers, while research on important practical topics in applied outlets do not get the same valuation as papers in top journals. A failing across all the business disciplines is that we have not explicitly recognized that the goal of doing research is to make business and society better, rather than simply publishing in somewhere "good" or somewhere that "counts".

b. Who benefits from our research?

Currently, research primarily benefits the researchers who do it (for career advancement) and those who read it, which consists primarily of other scholars. Articles are recognized for being interesting or novel rather than providing actionable insights. There is low priority given to how research could benefit business and the broader society, including employees, customers, and communities.

[13] The full Delphi report (Appendix C) is available on www.crrbm.org.

c. What kinds of topics are we studying?

More often than not, the choice of topics is driven largely by the prior literature and its gaps, regardless of the importance of the topic to the world at large. Topics are also often guided by the availability of data suitable for analysis and publication. This often limits research to organizations that are required to disclose information on a regular basis, in particular, exchange-listed corporations. Yet it has been observed that public firms are on decline, and most of the world's economies do not have a stock exchange, and many of those that do have created them only within the past three decades. Experimental research often favors topics that can be studied in a lab using undergraduate students. Finally, business school research often takes the form of "bite-sized chunks" that can be conducted in a few months and conveyed in a short article. Books are often not valued by personnel evaluation committees. Large-scale projects are seldom pursued.

d. *What topics SHOULD business school research focus on?*

The Delphi respondents expressed significant consensus on a delimited set of big topics framed as "grand challenges". The five topics receiving the greatest assent included, ordered from a focus on the firm to the society:

1. Understanding the broader impact of firms on society, beyond the creation of shareholder value.
2. Understanding the changing nature of work and the workforce, as well as the changing nature of consumers and their role in co-creating value.
3. Examining the social sustainability of work organizations, including the impact of work and organizations on the health and wellbeing of employees, customers, and society.
4. Enhancing environmental sustainability, managing the use of natural resources, reducing negative environmental impact.
5. Alleviating poverty, creating greater prosperity, and reducing economic inequality, both locally and globally.

The above topics may reflect the disciplinary background represented by the respondents but they align well with the United Nation's Sustainable Development Goals, and the World Economic Forum's Global Risks reports (2014 to 2016) identifying income disparity, unemployment and underemployment, asset bubbles, and failure of financial institutions as the major economic risks. Recent efforts in management, especially the Special Research Forum on Grand Challenges in Management, serve as an exemplar for business school research tackling societally relevant problems.[14]

4. The underlying research ecosystem and its equilibrium

Why is there such a gap between what business school research could do and what it actually does? The insights gained from the Delphi study help us identify points of leverage

[14] Grand Challenges in Management appears in the December 2016 issue (volume 59, issue 6) of the *Academy of Management Journal*. Also see introduction to the forum by George, Howard-Grenvillle, Joshi, and Tihanyi (2016).

and provide a map of the academic career system and the incentives it provides around research. The relevant actors, their priorities and inter-relationships among the actors constitute the research ecosystem. The actors include researchers; journals, editors and their editorial boards; faculty evaluation committees and senior faculty at each school; deans, provosts and presidents; funding agencies like NSF, NIH, or private foundations; school or university ranking publishers such as *Business Week* and *Financial Times*; and business school associations such as EFMD, AACSB, CEEMAN, AMBA. We must also include practitioners and policy makers as part of the ecosystem. They are the "consumers" of our products (knowledge from research) and services (teaching and consulting).

Within this system, the journal article is the essential unit of currency. Faculty members are evaluated on the basis of their publications in a small set of elite journals, defined by "impact factor" (despite doubt on its value as an accurate measure of quality) or its appearance on agreed lists of top journals (e.g., the *Financial Times* 50, which also has concerns on the political nature of journal selection). Schools themselves are evaluated in part on their faculty's record of publication in these journals. Prospective faculty members, in turn, weigh job opportunities on the basis of schools' reputations, based in part on publication records. Thus, those who want to be rewarded orient their work toward the perceived standards of elite journal editors and reviewers. These standards, in turn, reflect the values of editorial board members, who tend to be accomplished scholars who have been successful in the current system based on their publications in the list of elite journals. Taken together, we have achieved equilibrium where one set of actions supports another set of actions in a reciprocal and mutually reinforcing way. However, this equilibrium reflects the local isolation of academics and a clear disconnect from the society embedding the research ecosystem. The localized equilibrium has led to questions on both scientific credibility and the societal value of the research.

It should be apparent that systemic change in this equilibrium is difficult, as any change will require coordinated actions by key actors in all the relevant decision posts: deans and evaluation committees; journal editors and boards; funding agencies; and accreditation bodies. None of them can do it alone. Suppose that a visionary dean decided to encourage a different, more "responsible" kind of work that was not currently rewarded by elite journals. Faculty might then aim their publications at lesser journals (or even books!), which would harm the school's reputation, making it difficult to hire top scholars and perhaps harming the school's accreditation and funding. Or suppose that a visionary editor of an elite journal sought to break away from the pack and publish more responsible research. S/he is likely to find that both the associate editors and the editorial board are not enthusiastic about abandoning the standards in which they have been trained (such as contribution to theory, sophisticated statistics, novelty). Even if an editor were successful in replacing the entire team with more malleable scholars, the result is almost certain to be a decline in impact and reputation of the journal and its removal from the elite list. Or imagine that an accrediting body sought to radically change its standards, without the participation of faculty, deans, and journal editors. Much the same problem arises, and it's easy to imagine that a new accreditor would quickly arise to take its place. Systemic change requires coordinated action. Without it, independent stakeholder attempts will likely fail.

E. CONCLUSION: SCIENCE FOR A BETTER WORLD

The current system is falling short of fulfilling our collective potential. But, we are not suggesting that we should stop publishing in the top journals, nor should we mute contributions to theory. We are saying that top journals are not the only venue through which to share our important discoveries and should not be our only aspiration. The goal for researchers and their institutions should be societal impact, not simply publications in a small set of journals with limited readership. There are other appropriate outlets like books, specialty or applied journals, and the increasingly important Internet platforms. The results of research are important input into the curriculum and are the basis for informing public policies and advising practice. Our current ecosystem is reinforcing research that is narrow, outdated and insulated from the real world. We encourage increasing the diversity of topics, methods, disciplinary perspectives, assumptions, contexts, and dissemination methods. Diversity should be a central part of our research vision, with societal impact as a central goal of responsible research. The research eco-system has a web of inter-related players. Each has a role to play in encouraging and supporting efforts to move the current citation-based publication-oriented ecosystem to one that supports the principles associated with responsible research. Complementary and coordinated actions involving all players in the ecosystem are necessary to reach Vision 2030.

1. Consequences of a "do-nothing" option

Doing nothing and letting things evolve on their natural course is certainly an option. This option describes how things have progressed in the past two decades or some may even argue since the Gordon and Howell report in 1959. But should we continue to invest in an activity with limited substantive returns? Business and management research is extremely costly. If 50% of the faculty of a typical research school devotes 50% of their time to research, then about 25% of the school's budget is spent on research. With increasing competition for resources, there will be increasing pressure to demonstrate the societal value of research to resource providers, or business schools will run the risk of losing legitimacy. Life in business schools will become more and more stressful as faculty researchers continue to compete to publish in the A journals. Finding such research work to be both stressful and demeaning, business schools may begin to lose talents to their non-university-based competitors. This talent exit has already begun, with scores of academics joining hi tech startups, which offer the promise to change the world. Young talents aspiring to make a difference in the world and finding meaning in their life may not be attracted to business schools if nothing is done to change the research culture.

2. The changing context of business and management schools

The macro business environment is changing more rapidly than academic scholars have shown awareness of. There are unprecedented technological changes: the ubiquity of ecommerce, increasing use of artificial intelligence and robotics to replace human decision-making and tasks in many fields including manufacturing, electronics, healthcare, and education. For the business school, there is decreasing enrollment, escalating tuition,

declining budget support, increasing call for accountability and transparency, rising use of MOOCs, along with global competition among over 14,000 business schools worldwide. This is precisely the time when we need to step back and reflect on the role of business schools at large, and specifically the role and potential impact of research in the business schools. What must we do to ensure that we are using our resources and talents effectively to address the pressing problems confronting business and society in the twenty-first century? Engaging in responsible research in the manner described in this paper is not only important for both the epistemic and social goals of science but more importantly for the flourishing of the businesses and society that business schools serve. Business schools hold a unique position to create a research-based path to a better future.

3. A Call to Action: "Responsible research for better business and a better world"

At the dawn of the 21st century, the world is facing immensely challenging tensions in all aspects of society: economic, political, technological, social, and environmental. The United Nations (2015) has pledged to end poverty, protect the planet, and ensure prosperity in the next fifteen years through implementing 17 sustainable goals by its 195 member states.[15] In 2008, the National Academy of Engineering identified 14 grand challenges for engineering in the areas of education, artificial intelligence, healthcare, clean water, energy, urban infrastructure, cyberspace security, and more.[16] Leaders in government, business and civil societies have identified a myriad of similar challenges. Business and management research can do much to contribute to meeting these challenges by discovering management processes and systems to improve collective work at the organizational and national levels. These could include the responsible use of financial resources, accounting methods for assessing societal impacts, innovative products and services to meet the needs of the bottom of the pyramid, sustainable marketing and supply chain, logistics to reach currently inaccessible regions, attention to both wealth creation and wealth distribuition, to name a few. Contributing to a better world is the ultimate goal of science. Science in business and management can and must live up to its obligation and realize its potential through engaging in responsible research that we humbly propose.

We invite widespread debate and dialogue on the ideas discussed in this white paper.

[15] Please go to the SDG website (http://www.un.org/sustainabledevelopment/sustainable-development-goals/) for the list of 17 goals, suggestions on implementation actions, calendar, and what each person can do to help in the achievement of these goals.

[16] Please refer to the Academy of Engineering website for details on these grand challenges for engineering in the 21st century: http://www.engineeringchallenges.org/challenges.aspx

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